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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
Federal-State Joint Board on Universal Service:	)	CC Docket No. 96-45
Requests to Redefine "Voice Grade Access" for Purposes of Federal Universal Service Support	)	DA 99-2985

REPLY COMMENTS OF WESTERN WIRELESS CORPORATION

Western Wireless Corporation ("Western Wireless") hereby submits its Reply to the comments filed on the proposal to modify the definition of "voice grade access" in the FCC's universal service rules, as set forth in the Public Notice released December 22, 1999. 1/ Except for the proponents of the rule change, the commenters all strongly oppose changing the definition of voice grade access to accomplish an objective that would be contrary to the law and would not lead to the result intended by the proponents of the rule change. The comments filed in this proceeding show that the proposed rule change would have unintended consequences that would not advance and preserve universal service.

1/ Public Notice, *Common Carrier Bureau Seeks Comment on Requests to Redefine "Voice Grade Access" for Purposes of Federal Universal Service Support*, CC Docket No. 96-46, DA 99-2985 (rel. Dec. 22, 1999) ("Public Notice").

Western Wireless is one of only a few competitive carriers that has expressed and demonstrated a real commitment to enter the universal service market and provide rural residential consumers with a competitive choice for their telecommunications needs. The issues faced by rural consumers are well documented – unserved areas, underserved areas, lack of access to new, innovative and advanced services, and no choice for their telecommunications needs. To resolve these issues, Congress established a statutory framework the combines the benefits of competition with the need for ensuring that all Americans have access to telecommunications services. The FCC has implemented this statutory mandate by adopting rules and policies that further the goal of competition and universal service.

One of the universal service rules adopted by the Commission is Section 54.101(a)(1), which defines voice grade access to include a minimum bandwidth of 300 to 3,000 Hertz. 2/ In adopting this rule, the Commission held "that the record in this proceeding does not demonstrate that [ ] higher bandwidth services and data transmission capabilities . . . are, at this time, necessary for the public health and safety and that a substantial majority of residential customers currently subscribe to these services." 3/ While the Commission further concluded that "a change in our definition of supported services" may be warranted based on "changes

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2/ 47 C.F.R. § 54.101(a)(1).

3/ *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report and Order, 12 FCC Rcd 8776, 8811-12 ¶ 64 (1997).

in technology, network capacity, consumer demand, and service deployment," 4/ the comments submitted in this proceeding do not support a conclusion that such has occurred. In fact, just the opposite is true.

The record in this proceeding demonstrates that:

- The current standard provides quality voice grade service.
- There is no industry standard for the minimum voice grade access bandwidth requested by the RUS.
- Significant costs would be associated with change, without any countervailing benefits.
- The voice grade access requirement is designed to support the ability to make and receive *voice* telephone calls, not to send or receive data – the improvement of which is the purported goal of the RUS proposal – and current universal service mechanisms already provide for adequate voice and data access.
- There is a complete lack of evidence that an expanded frequency range would improve existing data transmission rates, especially given that numerous other factors besides bandwidth affect data transmission.
- If improving data transmission speeds is RUS's real concern, it would be better advanced by having rural carriers improve and/or update their networks rather than requiring the "modest" maximum improvement of 20% that a 500 Hz bandwidth expansion could offer.

Based upon further analysis of the proposed change to the bandwidth of voice grade access, Western Wireless agrees with the commenters opposing the proposed change in the bandwidth rule and offers the following further comments.

4/ *Id.*

Factors That Affect Modem Performance

In addition to bandwidth, modem performance depends upon modulation type, noise or interference level, error correcting codes, filter characteristic, transmission data rate, transmit media and channel bandwidth. To maximize modem performance, all of these factors need to be taken into consideration, not just channel bandwidth. While a wider bandwidth may lead to increased modem performance for data transmissions, it could also lead to increased noise and interference, and result in a reduction in voice quality. 5/

Technical Issues Raised by Increasing the Voice Grade Bandwidth

An increase in the voice grade bandwidth could result in cellular service providers and other telecommunications carriers not being eligible as universal service providers. 6/ Additionally, voice quality could be degraded by an increase in the bandwidth because the noise level increases by approximately 0.74 dB while the desired voice signal level increases by only approximately 0.29 dB, or approximately 0.1 dB for changes in the bandwidth to 200-3,400 Hertz or 300-3,500

5/ If the objective is to increase data capabilities, then this can be accomplished through a receiver with better filter design, an efficient coding scheme, or a higher quality transmission media, and not necessarily by changing the bandwidth for voice grade access.

6/ *See* the attached Declaration of Herbert C. Harris.

Hertz, respectively. 7/ To maintain the same voice quality when there is increased noise and/or interference, the required transmit power from handsets and/or base stations would need to be raised, which presents other issues that would need to be considered.

Financial Impact of Changing the Voice Grade Bandwidth

The financial impact would be significant for wireless carriers. First, some carriers would need to modify existing systems to meet the wider bandwidth requirement. Second, to the extent that a change in bandwidth results in reduced service quality, wireless carriers would need to invest in more cell sites and equipment to remedy gaps in coverage and dropped calls caused by higher noise or interference.

Conclusion

Western Wireless agrees that the concept of universal service should not be static, but an elastic concept based upon well-reasoned public policy objectives. The advocates for the increase in the bandwidth of voice grade access fail to articulate a well-reasoned policy objective that the proposal is intended to accomplish. Instead, the comments in this proceeding demonstrate that an increase in the

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7/ The numbers are computed based upon a typical long-term average spectral energy density for continuous speech and an additive white noise. ROGER L. FREEMAN, REFERENCE MANUAL FOR TELECOMMUNICATIONS ENGINEERING (Wiley-Interscience, 1985).

bandwidth of voice grade access would be contrary to the law and would have unintended consequences that would not advance and preserve universal service.

Respectfully submitted,

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February 4, 2000

DECLARATION

I, Herbert C. Harris, hereby declare and state as follows:

1. I am a communications consulting engineer with the firm of Kurtis & Associates, P.C.;

2. I graduated from the Johns Hopkins University, Baltimore, Maryland, with a degree of Bachelor of Science in Electrical Engineering in 1981;

3. I was formerly employed by the Federal Communications Commission as an engineer with the Office of Science and Technology, Research and Analysis Division in Columbia, Maryland;

4. I am familiar with Part 22 and other relevant portions of the Commission's Rules;

5. That with regard to CC Docket No. 96-45 and the request for comment to modify the definition of "voice grade access", I have read testimony against this modification by many of the filers and find their arguments to be relevant;

6. I am familiar with the Cellular System Compatibility Specifications Bulletin prepared by the Federal Communications Commission;

7. That these specifications mandate that cellular systems comply with certain standards;

8. That these standards explicitly specify the pre-emphasis characteristics of both the land station and the mobile station, have a nominal 6dB/octave response between 300 and 3000 Hz;

9. That these specifications are the same as the characteristics currently used to define the bandwidth for "voice grade access";

10. That if the Federal Communications Commission changes these standards, the wireless signal of cellular systems would not meet the new definition of "voice grade access";

11. That changing the bandwidth specifications for "voice grade access" would also have an adverse impact on other classes of telecommunications providers.

12. The foregoing statements are true and correct of my own knowledge except such statements therein made on information and belief, and as to such statements, I believe them to be true.

I declare under penalty of perjury that the foregoing is true and correct.

2/4/2000 Herbert C. Harris

Date Herbert C. Harris